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(54) **A ROLLING AID FOR USE BY ELDERLY AND DISABLED PEOPLE**

FAHRBARES HILFSMITTEL FÜR SENIOREN UND BEHINDERTE

APPAREIL DE MARCHÉ POUR PERSONNES AGEES ET INVALIDES

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Description

[0001] The invention relates to a rolling aid for use by elderly and disabled people. Such aids are well-known e.g. as "rollator" or "walker" which are used by elderly people and disabled people to render self-reliant walking easier and safer.

[0002] An aid of the latter type, being in fact a walking aid and having the features defined in the first part of claim 1, is known from DE 4328875. The advantage of this well-known aid is to be seen in that its frame is foldable in both the rolling (walking) direction and the transverse direction, so that in the (completely) folded state, it occupies so little space, that it may be readily carried along when going by bus or tram, or taken along in the trunk of an automobile. The well-known aid, however, has certain disadvantages which may affect the ease of use as will be explained hereinafter.

[0003] With the well-known device the second foldable transverse connection is carried out in the form of two articulated V-bars, which have the respective apex directed upwardly and downwardly respectively and cross one another to form a double linkage, wherein one leg of each articulated V-bar extends through and is pivotally connected to a bifurcated leg of the other V-bar. The outer ends of the V-bar that has its apex directed upwardly, engage the frame tubes of the first pair of frame tubes, whereas the outer ends of the V-bar that has its apex directed downwardly, engage the ends of the sections of the frame tubes of the second pair of frame tubes that deviate substantially horizontally towards said first pair of frame tubes and extend parallel to one another. In order that folding in the transverse direction will cause the frame tubes of both pairs of frame tubes to move towards one another in the rolling (walking) direction, it is essential that the V-bars are located in a plane that makes an angle with the plane in which the frame tubes of the first pair of frame tubes are located, and that this angle will decrease when folding. The latter condition, however, implies that the outer ends of the V-bars must be allowed to pivot relative to the frame tubes of the first pair of frame tubes and relative to the horizontally deviating sections of the frame tubes of the second pair of frame tubes respectively about two mutually perpendicular axes, which involves a rather complex structure and may be detrimental to a smooth folding and unfolding procedure respectively.

[0004] The invention aims at providing an improved rolling aid, which does not have the disadvantages mentioned hereinabove. According to the invention this aim is achieved thanks the features mentioned in the second part of claim 1.

[0005] Thanks the features of the invention the hinge bars of the second foldable transverse connection may be simply positioned within the plane of the frame tubes of the first pair of frame tubes and may thus pivot about single axes at right angles to this plane, while the required concurrence of the procedure of folding in the

transverse direction and the procedure of folding in the rolling (walking) direction is effected in a smooth manner by the sections of the frame tubes of the second pair of frame tubes, which extend - in the rolling (walking) position - obliquely inwardly and are rotatably mounted to the respective hinge joint platform halves. Moreover, the obliquely inwardly directed frame tube sections substantially contribute to the stability of the aid.

[0006] A simple and practical embodiment of the aid of the present invention also has the features of claim 2. In this case the second foldable transverse connection comprises two crossing links only, which in the unfolded position need to function as a "shore" only.

[0007] An alternative embodiment having the possibility of locking the aid in the use-position, has the features of claims 3-5.

[0008] A particular embodiment of the aid of the present invention has the features mentioned in claim 6 and 7, wherein the feature of claim 6 provides for a simple way of preventing the deviating frame tube sections, which are rotatably mounted to the hinge joint platform, from turning about their axes relative to one another, and the feature of claim 7 provides for handle bars, to which merely a vertically directed lifting force needs to be applied to have the frame of the aid fold together simultaneously in both directions (transverse direction and rolling (walking) direction).

[0009] It will be understood that when the aid according to the present invention is used as a rollator (rolling walking aid) the pair of frame tubes which hereinabove is defined as "the first pair of frame tubes" will constitute the forward pair of frame tubes and that "the second pair of frame tubes" may in that case be considered as the rear pair of frame tubes.

[0010] Through the features defined in claims 6 and 7 the aid according to the present invention is also suitable for use as a wheel chair. In that case the handle bars, which function as push handle bars in case of use as a rollator, may in case of use as a wheel chair, fulfil the function of armrests, whereas the handle bars at the upper end of the upwardly directed tube sections of the frame tubes of the second pair of frame tubes (claim 7) may serve - when using the aid as a wheel chair - as push handle bars. Moreover, a "real" backrest could be provided, removably if desired, in two parts. In that case the rolling direction is opposite to that in case of using the aid as a rollator.

[0011] Further features and advantages of the rolling aid according to the present invention are explained hereinafter by way of two examples with reference to the accompanying drawing.

Fig. 1 is an elevational view of the aid according to the invention, designed as a rolling walking aid or "rollator";

fig. 2 is a front view as seen from the left in fig. 1;

fig. 3 is a plan view according to the arrow III in fig. 1;

fig. 4 is a plan view according to the arrow IV in fig. 1;

fig. 5 is a rear view of the platform of the walking aid of fig. 1-4 in the folded position;

fig. 6 is a plan view, partially in section according to the midplane of the walking aid, showing a detail of a locking mechanism;

fig. 7 shows an alternative for the lower hinge joint bar used in the embodiment according to fig. 1-6 and

fig. 8 is an elevational view of the aid according to the invention, now designed as a passive type of wheel chair.

[0012] With reference to fig. 1, the walking aid shown therein in the use position essentially consists of a front frame section A and a rear frame section B. The front frame section A (see also fig. 2) comprises two transversely spaced and parallel frame tubes 1, each with a lower, forwardly bent end portion provided with a front wheel 2, while each of the frame tubes have an upper, extended end portion which is bent to a handle bar 3. 4 is a lever mechanism mounted adjacent the handle 3 and serving to control a device (not shown) for blocking the wheels 2.

[0013] In the use-position shown in fig. 1 the front frame section A is taking a slightly rearwardly inclined position (e.g. at an angle of 15°). Between the frame tubes 1 of the front frame section A there are provided a lower transverse connection a and an upper transverse connection b. The lower transverse connection is constituted by a hinge joint bar, the two bar halves a₁ are pivotally connected to opposite pivot plates 5 provided on the respective tubes and are pivotally connected to one another in the center by means of a connecting piece 6. The lower end of an upwardly extending tie rod 7 positioned in the plane of the frame section A is also connected to the connecting piece 6. From each of the opposite pivot plates 5 a support link 8 extends obliquely upwardly towards the center between the two frame tubes 1, where the two support links 8 pivotally connect to a guide piece 9, through which the tie rod 7 extends upwardly.

[0014] The upper transverse connection b is provided at about knee level and forms a special hinge joint bar. In the extended position it constitutes a platform which extends rearwardly from the frame section A. The upper hinge joint bar halves or platform halves b₁ are provided at their outer edge with a bushing 10 (see fig. 3 and 4 in particular), that is pivotally seated on a tubular stub 11, fastened to the inner side of the respective frame tube 1 and extending from the latter rearwardly. The two hinge joint bar halves or platform halves b₁ are connected to a central piece 13 about parallel axes 12 (see fig. 2, 3 and 5). On the front side of the central piece 13 (see fig. 2 and 3) there is provided a ring member 14 which projects forwardly from between the two platform halves and surrounds the upper free end of the tie rod 7 connected to it. A rear pivot plate 15 (see fig. 3 and 5) covers the central piece 13 at the rear side and is provided on

the rearwardly extending ends of the pivot axes 12. In the use position (represented by solid lines in the drawings) the central piece 13 of the stretched platform b has its ring member 14 abutting the upper face of the guide piece 9 (see fig. 2).

[0015] From the above it will be understood that applying an upwardly directed force to the central piece 13 of the platform b in fig. 2 will cause the platform halves b₁ to swing upwardly about the tubular stubs 11. The ring member 14 of the central piece 13 will thereby be lifted from the guide piece 9, while taking the tie rod 7 along upwardly. The upward movement of the tie rod 7 causes the connecting piece 6 to be pulled from the lower (slightly "pushed-through") position upwardly into and through the completely stretched position of the hinge joint bar a, whereby the hinge joint bar halves a, and the supporting links 8 will fold together while the tie rod 7 is sliding upwardly relative to the guide piece 9. This upward folding movements of the lower hinge joint bar 8 and the upper hinge joint platform b cause the two frame tubes 1 to be transversely pulled together.

[0016] The second frame section B essentially consists of two frame tubes 21, each comprising four substantially straight tube sections 21a-21d. In the use position shown in fig. 1 the mutual parallel tube section 21a extend obliquely rearwardly from the stretched platform b at an angle to the vertical which is larger than the angle of inclination of the front frame section A and may be in the order of 40°. The frame tube sections 21a carry each at the lower end a rear wheel 22 and connect each adjacent a rear corner of the platform b through a connecting curve to a second frame tube section 21b, position in a plane parallel to the plane of the stretched platform b and extending from the respective corner of the stretched platform b obliquely forwardly towards the midplane of the platform b. The frame tube sections 21b are each rotatably and non slidably mounted to the lower side of a platform half b₁ by means of fastening clips 23.

[0017] On the front side of the platform b (see particularly fig. 2 and 3) each of the frame tube sections 21b connect through a connecting curve to a third frame tube section 21c, the axes of which are substantially parallel to those of the frame tube sections 21a. The frame tube sections 21c extend through two slightly spaced parallel bores in a connecting piece 24. The upper end portions of the frame tube section 21c project upwardly beyond the connecting piece 24 to form tube sections 21d adapted to be used as handles.

[0018] The walking aid described hereinabove may, with a simple operation, be folded together from the use position in fig. 1 in the rolling (walking) direction as well as in the transverse direction. As mentioned before when describing the front frame section A, applying an upwardly directed force to the central piece 13 of the platform b is enough for causing front frame section A to fold together in the transverse direction. Standing in front of, or even better, behind the walking aid - between

the wheels 22 - such force may be simply applied to the control handles 21d (see arrow P in fig. 1). As a result of this the platform b will fold in the upward direction and this, in turn, will cause the tube sections 21b to turn about their axes, due to which the two frame tubes 21 as a whole will move relative to the frame tubes 1 of the front frame section A into the position represented by the dash-dotted lines. In reverse order the weight of the folded platform and the frame tubes will tend to cause the walking aid to unfold from a tending folded position into the use position shown in fig. 1.

[0019] The locking mechanism shown in fig. 6 may be applied to have the walking aid locked in the use position. This locking mechanism comprises a substantially Z-shaped locking element 25, which is resiliently received in the center piece 13 of the platform b and extends with its upper flange portion 25a forwardly over the upper end 14 of the central piece 13. The locking element 25 is provided with a locking cam 25b, which, in the use position, engages a rearwardly extending locking edge 9a of the guide piece 9. In this way the central piece 13, 14 and the guide piece 9 are locked relative to one another, which excludes undesired folding of the walking aid.

[0020] To enable folding of the walking aid the locking element 25 may be simply depressed in the arrow direction indicated in fig. 6, as a result of which the locking cam 25b gets disengaged from the locking edge 9a.

[0021] Thus the invention provides a rolling walking aid which may be folded to an easily handable package and the comfort and stability in the use position of which are as good as with a walking aid with a completely rigid frame.

[0022] When utilizing the stretched platform b, in the use position of the walking aid, as a seat both of the handles 21d may also function as a backrest.

[0023] From a viewpoint of rigidity it may be desired to provide a flexible connecting element 26 between the front frame section A and the frame tube sections 21a of the rear frame section B. Preferably the frame tubes 1 of the front frame sections A are telescopingly adjustable, as shown in the drawing.

[0024] As a simple alternative for the lower hinge joint bar a used in the embodiment according to fig. 1-6, fig. 7 shows an assembly C of two crossing links c1, which may move relative to one another between the "semi-stretched" position shown by solid lines in fig. which corresponds with the use position of the walking aid, and the folded position represented by dashed lines in fig. 7, the latter position corresponding with the folded position of the walking aid.

[0025] The coupling between the upper hinge joint platform b and the alternative lower bar assembly, required for folding the walking aid, is in this case effected by pivotally connecting each of the free ends of the links c1 to a platform halve b' at c".

[0026] The aid according to the present invention as shown in fig. 1 is, in the first place, designed for use by

elderly people and disabled people as a walking aid. As hereinabove, however, mention has already been made of the possibility to use the platform as a seat. In that case the aid is in fact a wheel chair of the passive type, which can be moved by a third person. The travelling direction will then be opposite to the travelling direction in fig. 1, whereas the handles 21d may serve as push bars.

[0027] The embodiment shown in fig. 8 is particularly adapted for use as a wheel chair. The major adaptations as compared with the walking aid of fig. 1 are:

- a. the push handle bars 3 of fig. 1 have been transformed to an armrest 30 in fig. 8;
- b. the handle bars 21d of fig. 1 are placed on a slightly higher level and transformed to transverse pushing bars 210d in fig. 8;
- c. in the embodiment of fig. 8 a "real" backrest 31 is provided. Preferably the latter is formed from two parts, each of which is directly provided on a tube section 210c and extends from the latter in the transverse direction, so that folding the wheel chair together - which involves a rotary movement of the tube sections 210c about their axes - will cause the backrest to fold as well. The two backrest parts may be pivotally connected to one another in the area between the two tube sections 210c and about an axis that is parallel with said tube sections. The pivot connection may also form the connection between the two tube sections 210c;
- d. as compared with fig. 1 the oblique tube section 211a and 210c of the rear frame section B (which in fact has become the front frame section in fig. 8) are positioned at a slightly steeper angle;
- e. as compared with the embodiment of fig. 1 the fixed wheels and the swivelling wheels in the embodiment of fig. 8 have been exchanged;
- f. in the embodiment of fig. 8 the lower end of the oblique tube section 210a has been bent inwardly to form a footrest 211.

[0028] The folding procedure and the folding mechanism has remained the same.

[0029] The embodiment of fig. 8 is particularly suitable for domestic use, where a partner or helper will be generally available for a quick fold-out of the wheel chair to transverse the patient to another part of the house, after which the wheel chair may be refolded to a package that takes little space.

Claims

1. A rolling aid for use by elderly people and disabled people, comprising a frame provided with handle bars, said frame comprising
 - a first (A) and a second (B) pair of frame bars or frame tubes (1, 21; 10, 210) which extend - in the

rolling position - obliquely forwardly and rearwardly respectively with respect to a rolling (walking) direction and are provided at their lower ends with wheels (2, 22; 20, 220), and

a first upper and second lower foldable transverse connection (a, b; c, b) between each two frame tubes forming a pair, which allow the pairs of frame tubes (A, B) to be folded in a transverse direction with respect to said rolling (walking) direction, whereas

said pairs (A, B) are connected to one another in such a way, that they may be folded together about a transversely directed axis, wherein

the first upper foldable transverse connection (b) is formed as a foldable or hinge joint platform (b) which takes - in the rolling position - a stretched position in a substantially horizontal plane, halves (b1) of said platform (b) being pivotally connected in the vertical plane of symmetry of the aid and being each pivotally mounted to the assembly of frame tubes (1, 21; 10, 210) on a respective side of the aid for an upward folding movement, whereas

the second lower foldable transverse connection (a; c) is formed by a plurality of hinge bars provided on a lower level with respect to the platform (b) of the upper foldable transverse connection (b), which connect the frame tubes (1; 100) of said first pair (A), which tubes extend upwardly beyond the stretched platform (b) up to handle bar level, and

the space between the obliquely downwardly extending frame tubes (21; 210) of said second pair (B), which - at the level of the stretched platform (b) - deviate substantially horizontally towards said first pair (A) of frame tubes, is free from transverse connections,

characterized in that the platform halves (b1) are each hingedly connected to a frame tube (1; 100) of said first pair (A) that extend - in the unfolded state - upwardly beyond the stretched platform (b) and that

tube sections (21b; 210b) of the frame tubes (21; 210) of said second pair (B) which deviate - in the rolling position - substantially horizontally, are each directed from a location at a corner of the stretched platform (b) on a respective side of the aid obliquely inwardly towards a connecting point at an opposite transverse edge of the platform, said deviating tube sections (21b; 210b) being mounted to the respective platform halves (b1) for a rotary movement about their axes relative to said platform halves, while being prevented from turning about their axes relative to one another,

said plurality of hinge bars (a1; c1) of the second foldable transverse connection being, on one hand, exclusively connected to the frame tubes (1; 100) of said first pair (A) and, on the other hand, directly connected to the platform (b).

2. An aid according to claim 1, **characterized in that** the plurality of hinge bars of the second foldable transverse connection comprises two links (c1), which - in the unfolded position of the aid - are each extending from a frame tube (1; 100) of said first pair (A) of frame tubes obliquely upwardly and inwardly to a pivot point at the respective longitudinal edge of the hinge joint platform half (b1) on the opposite side.
3. An aid according to claim 1, **characterized in that** the plurality of hinge rods (a1) of the second foldable transverse connection constitutes a hinge joint bar (a), the bending point (6) of which is connected to the bending point (13) of the hinge joint platform (b) through a tie rod (7).
4. An aid according to claim 3, **characterized by** at least one support link (8), that extends - as seen in the use position of the aid - from a pivot location adjacent the lateral pivot of a hinge joint bar half (a1) to a pivot connection with a guide piece (9) that is positioned in the midplane of the first pair (A) of frame tubes and under the hinge joint platform (b) in the stretched position of the latter, wherein said tie rod (7) extends through said guide piece (9) upwardly.
5. An aid according to claim 4, **characterized by** a locking member (25), by means of which the guide piece (9) and said bending point (13) of the platform (b) may be mutually locked in the use position of the aid.
6. An aid according to claims 1-5, **characterized in that** said deviating frame tube sections (21b), which are pivotally connected to said platform (b), are each deviating - adjacent said connecting point at the respective transverse edge of the platform - upwardly to transfer into a frame tube section (21c), the axis of which is at least substantially parallel to that of the respective frame tube section (21a; 210a) of said second pair (B) of frame tubes, that carries a wheel (22; 220) at its lower end, wherein the axes of said upwardly deviating frame tube sections (21c) are locked relative to one another in the transverse direction.
7. An aid according to claim 6, **characterized in that** the upper end portions of the upwardly deviating frame tube sections (21c) are bent to form handle bars (21d).
8. An aid according to claims 1-7, **characterized in that** the platform halves (b1) have their outer ends rotatably mounted on axle stubs (11) that extend from the frame tubes (1; 100) of said first pair (A) of frame tubes towards said second pair (B) of frame

tubes.

9. An aid according to claim 8, **characterized in that** said axle stubs (11) are formed by tubular stubs that extend from the respective frame tubes (1; 100) rearwardly. 5
10. An aid according to claims 8-9, **characterized in that** said platform halves (b1) are pivotally connected to a connecting piece (13) about axes (12) that are positioned parallel to the stubs (11), said connecting piece (13) functioning as a bending point. 10

Patentansprüche 15

1. Fahrbares Hilfsmittel zur Benutzung durch Senioren und Behinderte, das ein Gestell aufweist, das mit Handgriffstangen versehen ist, wobei genanntes Gestell umfaßt: 20

ein erstes (A) und ein zweites (B) Paar von Gestellstangen oder Gestellrohren (1, 21; 10, 210), die sich - in der Fahrposition - schräg nach vorn bzw. hinten relativ zu einer Roll- (Geh-) Richtung erstrecken und an ihren unteren Enden mit Rädern (2, 22; 20, 220) versehen sind, und 25

eine erste obere und zweite untere faltbare Querverbindung (a, b; c, b) zwischen beiden zwei Gestellrohren, die ein Paar bilden, was es ermöglicht, dass die Paare von Gestellrohren (A, B) in einer Querrichtung relativ zu der genannten Roll- (Geh-) Richtung gefaltet werden können, während 30

die genannten Paare (A, B) miteinander in der Weise verbunden sind, dass sie um eine quer gerichtete Achse zusammen gefaltet werden können, worin

die erste obere faltbare Querverbindung (b) als eine faltbare oder Gelenkverbindungsplatte (b) ausgebildet ist, die - in der Fahrposition - eine gestreckte Stellung in einer im wesentlichen horizontalen Ebene einnimmt, wobei Hälften (b₁) der genannten Platte (b) schwenkbar in der vertikalen Symmetrieebene des Hilfsmittels schwenkbar verbunden sind und jede schwenkbar an der Einheit von Gestellrohren (1, 21; 10, 210) an einer betreffenden Seite des Hilfsmittels für eine Faltbewegung nach oben angebracht sind, während 40

die zweite untere, faltbare Querverbindung (a; c) durch eine Mehrzahl von Gelenkstangen gebildet ist, die auf einer niedrigen Höhe relativ zur Platte (b) der oberen faltbaren Querverbindung (b) vorgesehen sind, welche die Gestellrohre (1; 100) des genannten ersten Paares (A) verbinden, welche Rohre sich über die ge- 55

streckte Platte (b) hinaus nach oben bis zur Handgriffstangenhöhe erstrecken, und der Raum zwischen den sich schräg nach oben erstreckenden Gestellrohren (21; 210) des genannten Paares (B), welche - auf der Höhe der gestreckten Platte (b) - im wesentlichen horizontal gegen das erste Paar (A) der Gestellrohre auseinander strebt, frei von Querverbindungen ist,

dadurch gekennzeichnet, dass die Hälften (b₁) der Platte jede gelenkig mit einem Gestellrohr (1; 100) des genannten ersten Paares (A) verbunden sind, die - im entfalteten Zustand - sich nach oben über die gestreckte Platte (b) erstrecken, und dass Rohrabschnitte (21b; 210b) der Gestellrohre (21; 210) des genannten zweiten Paares (B), welche - in der Fahrposition - im wesentlichen horizontal auseinander streben, jeder von einer Stelle an einer Ecke der gestreckten Platte (b) an einer betreffenden Seite des Hilfsmittels schräg nach innen gegen eine Verbindungsstelle an einem gegenüberliegenden Querrand der Platte hin gerichtet sind, wobei genannte auseinander strebende Rohrabschnitte (21 b; 210b) an den betreffenden Hälften (b₁) der Platte für eine Drehbewegung um Achsen relativ zu den genannten Plattenhälften angebracht sind, während sie gegen eine Drehung um ihre Achsen relativ zueinander gehindert sind,

wobei die genannte Mehrzahl von Gelenkstangen (a₁; c₁) der zweiten faltbaren Querverbindung einerseits ausschließlich mit den Gestellrohren (1; 100) des genannten ersten Paares (A) verbunden sind und andererseits unmittelbar mit der Platte (b) verbunden sind.

2. Hilfsmittel nach Anspruch 1, **dadurch gekennzeichnet, dass** die Mehrzahl von Gelenkstangen der zweiten faltbaren Querverbindung zwei Verbindungen (c₁) umfaßt, die - in der entfalteten Position des Hilfsmittels - sich jeder von einem Gestellrohr (1; 100) des genannten ersten Paares (A) von Gestellrohren schräg nach oben und nach innen zu einer Schwenkstelle an dem betreffenden Längsrand der Gelenkverbindungsplattenhälfte (b₁) an der gegenüberliegenden Seite erstreckt.
3. Hilfsmittel nach Anspruch 1, **dadurch gekennzeichnet, dass** die Mehrzahl von Gelenkstangen (a₁) der zweiten faltbaren Querverbindung eine Gelenkverbindungsstange (a) bildet, deren Abbiegestelle (6) mit der Abbiegestelle (13) der Gelenkverbindungsplatte (b) durch eine Zugstange (7) verbunden ist.
4. Hilfsmittel nach Anspruch 3, **gekennzeichnet durch** zumindest einen Verbindungsträger (8), der sich - gesehen in der Benutzungsposition des Hilfs-

mittels - von einer Schwenkstelle nahe dem seitlichen Gelenk einer Gelenkverbindungsstangenhälfte (a_1) zu einer Schwenkverbindung mit einem Führungsstück (19) erstreckt, das in der Mittenebene des ersten Paares (A) von Gestellrohren und unter der Gelenkverbindungsplatte (b) in der gestreckten Stellung der letzteren gelegen ist, wobei sich die genannte Zugstange (7) durch das genannte Führungsstück (9) hindurch nach oben erstreckt.

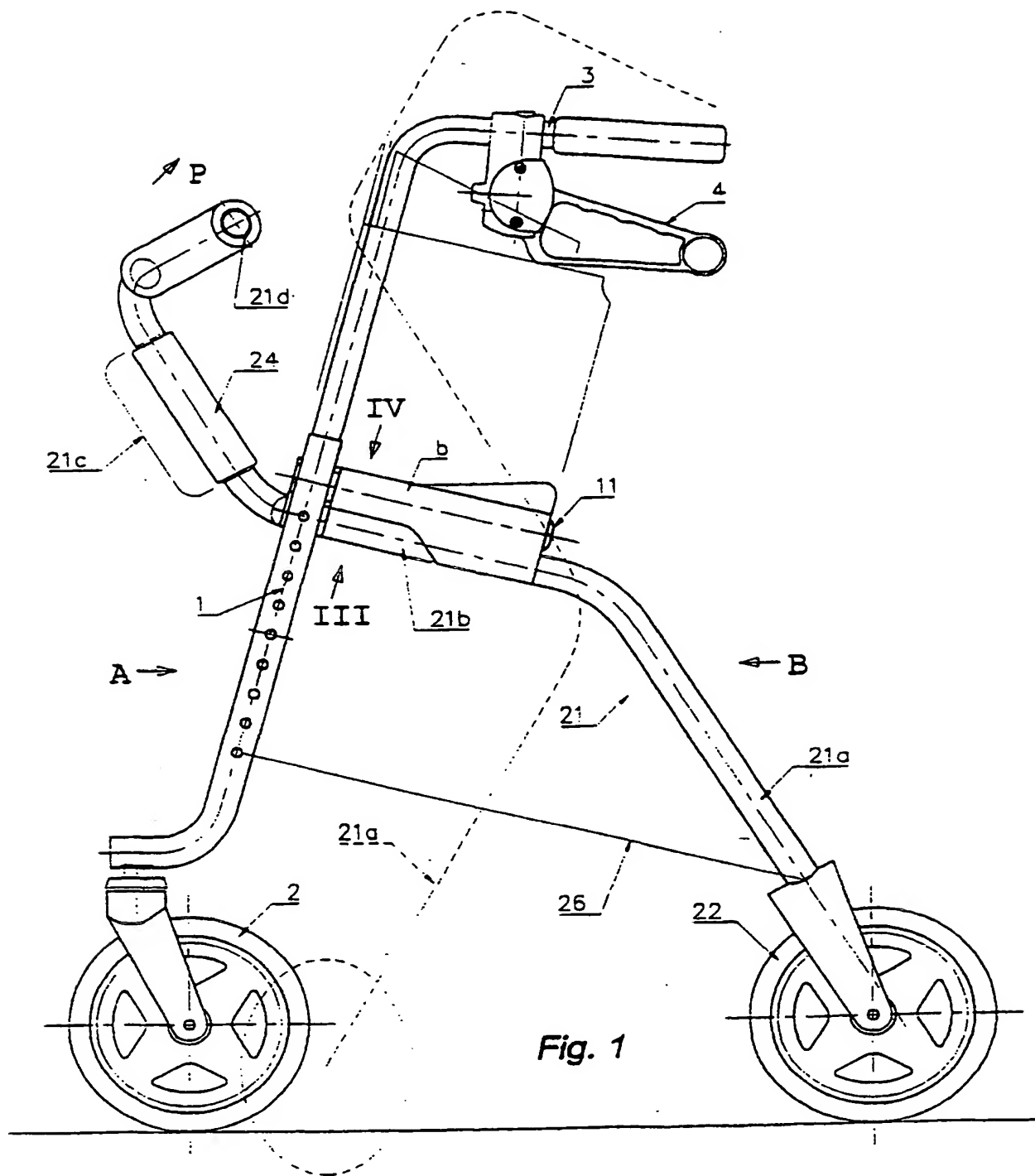
5. Hilfsmittel nach Anspruch 4, **gekennzeichnet durch** ein Riegeelement (25), mittels dessen das Führungsstück (9) und die genannte Abbiegestelle (13) der Platte (b) gegenseitig in der Benutzungsposition des Hilfsmittels verriegelt werden können.
6. Hilfsmittel nach Ansprüchen 1-5, **dadurch gekennzeichnet, dass** die genannten auseinander strebenden Gestellrohrabschnitte (21 b), die schwenkbar mit der genannten Platte (b) verbunden sind, jeder - nahe der genannten Verbindungsstelle an dem betreffenden Querrand der Platte - nach oben auseinander streben, um in einen Gestellrohrabschnitt (21c) überzugehen, dessen Achse zumindest im wesentlichen parallel zu derjenigen des betreffenden Gestellrohrabschnittes (21a; 210a) des genannten zweiten Paares (B) von Gestellrohren ist, welches ein Rad (22; 220) an ihrem unteren Ende trägt, wobei die Achsen der genannten nach oben auseinander strebenden Gestellrohrabschnitte (21c) relativ zueinander in der Querrichtung verriegelt sind.
7. Hilfsmittel nach Anspruch 6, **dadurch gekennzeichnet, dass** die oberen Endteile der nach oben auseinander strebenden Gestellrohrabschnitte (21c) gebogen sind, um Handgriffstangen (21 d) zu bilden.
8. Hilfsmittel nach Ansprüchen 1-7, **dadurch gekennzeichnet, dass** die Hälften (b_1) der Platte mit ihren äußeren Enden drehbar an Achsstützen (11) angebracht sind die sich von den Gestellrohren (1; 100) des genannten ersten Paares (A) von Gestellrohren gegen das genannte zweite Paar (B) von Gestellrohren hin erstrecken.
9. Hilfsmittel nach Anspruch 8, **dadurch gekennzeichnet, dass** die genannten Achsstützen (11) durch rohrförmige Stützen gebildet sind, die sich von den betreffenden Gestellrohren (1; 100) nach hinten erstrecken.
10. Hilfsmittel nach Ansprüchen 8-9, **dadurch gekennzeichnet, dass** die Hälften (b_1) der Platte mit einem Verbindungsstück (13) um Achsen (12) schwenkbar verbunden sind, die parallel zu den Stützen (11) gelegen sind, wobei genanntes Verbindungsstück

(13) als eine Abbiegestelle fungiert.

Revendications

1. Un appareil de marche monté sur roues destiné aux personnes âgées et invalides, comprenant un cadre équipé de poignées, ledit cadre comprenant une première (A) et une deuxième (B) paire de barres ou de tubes de cadre (1, 21; 100, 210) qui s'étendent - dans la position de roulement - obliquement vers l'avant et vers l'arrière respectivement par rapport au sens de la marche (direction de roulement) et qui sont munies de roues (2, 22; 20, 220) à leurs extrémités inférieures, et un premier raccordement transversal pliable supérieur et un second raccordement transversal pliable inférieur (a, b; c, b) chacun entre deux tubes de cadres formant une paire, lesquels permettent aux paires de tubes de cadre (A, B) d'être pliées dans une direction transversale par rapport au sens de la marche (direction de roulement), tandis que les dites paires (A, B) sont reliées l'une à l'autre de telle manière, qu'elles peuvent être pliées ensemble autour d'un axe dirigé transversalement dans lequel, le premier raccordement transversal pliable supérieur (b) est formé comme une plate-forme pliable ou à joint de charnière (b) qui prend - en position de roulement - une position étirée dans un plan essentiellement horizontal, les moitiés (b_1) de ladite plate-forme (b) étant reliées par pivot dans le plan vertical de symétrie de l'appareil de marche et étant chacune montées de manière à pivoter vers l'ensemble des tubes de cadre (1, 21; 100, 210) sur un côté respectif de l'appareil de marche pour un mouvement de pliage ascendant, tandis que le deuxième raccordement transversal pliable inférieur (a; c) est constitué d'une pluralité de barres de charnière disposées sur un niveau plus bas par rapport à la plate-forme (b) du raccordement transversal pliable supérieur (b), qui relient les tubes de cadre (1; 100) de ladite première paire (A), lesquels tubes s'étendent vers le haut au-delà de la plate-forme étirée (b) jusqu'au niveau de la poignée, et l'espace entre les tubes de cadre s'étendant obliquement vers le bas (21; 210) de ladite deuxième paire (B), qui - au niveau de la plate-forme étirée (b) - dévie essentiellement horizontalement vers ladite première paire (A) de tubes de cadre, est exempt de raccordement transversal, caractérisé en ce que les moitiés de plate-forme (b_1) sont chacune reliée par charnières à un tube de cadre (1; 100) de ladite première paire (A) qui s'étend - dans l'état déplié - vers le haut au-delà de la plate-forme étirée (b) et en ce que les sections de tube (21b; 210b) des tubes de cadre (21; 210) de ladite deuxième paire (B) qui dé-

- vient - dans la position de roulement - essentiellement horizontalement, sont chacune dirigées à partir d'une position sur un coin de la plate-forme étirée (b) sur un côté respectif de l'appareil de marche obliquement vers l'intérieur en direction d'un point de raccordement situé sur un bord opposé transversal de la plate-forme, lesdites sections de tube déviant (21b; 210b) étant montées sur les moitiés de plate-forme respectives (b1) pour un mouvement rotatif autour de leurs axes par rapport aux dites moitiés de plate-forme, tout en étant empêchées de tourner autour de leurs axes l'une par rapport à l'autre,
- ladite pluralité des barres de charnière (a1; c1) du deuxième raccordement transversal pliable étant d'une part, exclusivement reliées aux tubes de cadre (1; 100) de ladite première paire (A) et, d'autre part, directement reliées à la plate-forme (b).
2. Un appareil de marche selon la revendication 1, **caractérisé en ce que** la pluralité de barres de charnière du deuxième raccordement transversal pliable comprend deux liens (c1), qui - en position déplié de l'appareil de marche - s'étendent chacun à partir d'un tube de cadre (1; 100) de ladite première paire (A) de tubes de cadre obliquement vers le haut et vers l'intérieur vers un point pivot situé sur un bord longitudinal respectif de la moitié plate-forme de joint de charnière (b1) sur le côté opposé.
 3. Un appareil de marche selon la revendication 1, **caractérisé en ce que** la pluralité des tiges de charnière (a1) du deuxième raccordement transversal pliable constituent une barre de joint de charnière (a), dans lequel le point de flexion (6) est relié au point de flexion (13) de la plate-forme de joint de charnière (b) par une tige de renfort (7).
 4. Un appareil de marche selon la revendication 3, **caractérisé par** au moins un lien de soutien (8), qui s'étend - comme vu en position d'utilisation de l'appareil de marche - à partir d'un emplacement de pivot adjacent au pivot latéral d'une moitié de barre de joint de charnière (a1) vers un raccordement de pivot avec une pièce de guidage (9) qui est placé dans le plan médian de la première paire de tubes de cadre (A) et sous la plate-forme de joint de charnière (b) dans la position étirée de cette dernière, dans lequel ladite tige de renfort (7) s'étend à travers ladite pièce de guidage (9) vers le haut.
 5. Un appareil de marche selon la revendication 4, **caractérisé par** un membre de verrouillage (25), au moyen duquel la pièce de guidage (9) et le point de flexion (13) de la plate-forme (b) peuvent être mutuellement verrouillés en position d'utilisation de l'appareil de marche.
 6. Un appareil de marche selon les revendications 1-5, **caractérisé en ce que** lesdites sections de tube de cadre déviant (21b), qui sont reliés par pivot à ladite plate-forme (b), dévient chacune - de manière adjacente audit point de raccordement situé sur le bord transversal respectif de la plate-forme - vers le haut pour se transformer en une section de tube de cadre (21c), dont l'axe est au moins essentiellement parallèle à celui de la section respective de tube de cadre (21 a; 210a) de ladite deuxième paire de tubes de cadre (B), qui porte une roue (22; 220) à son extrémité inférieure, dans lequel les axes desdites sections de tube de cadre déviant vers le haut (21c) sont verrouillés relativement l'un par rapport à l'autre dans la direction transversale.
 7. Un appareil de marche selon la revendication 6, **caractérisé en ce que** les portions d'extrémités supérieures des sections de tube de cadre déviant vers le haut (21c) sont coudées pour former des barres de poignée (21d).
 8. Un appareil de marche selon les revendications 1-7, **caractérisé en ce que** les moitiés de plate-forme (b1) ont leurs extrémités externes montées rotatives sur des moignons d'axe (11) qui s'étendent à partir des tubes de cadre (1; 100) de ladite première paire (A) de tubes de cadre en direction de la dite deuxième paire (B) de tubes de cadre.
 9. Un appareil de marche selon la revendication 8, **caractérisé en ce que** lesdits moignon d'axe (11) sont constitués par les moignons tubulaires qui s'étendent respectivement des tubes de cadre (1; 100) vers l'arrière.
 10. Un appareil de marche selon les revendications 8-9, **caractérisé en ce que** les dites moitiés de plate-forme (b1) sont reliées par pivot à une pièce de liaison (13) autour d'axes (12) qui sont disposés parallèles aux moignons (11), la pièce de liaison (13) fonctionnant comme point de flexion.



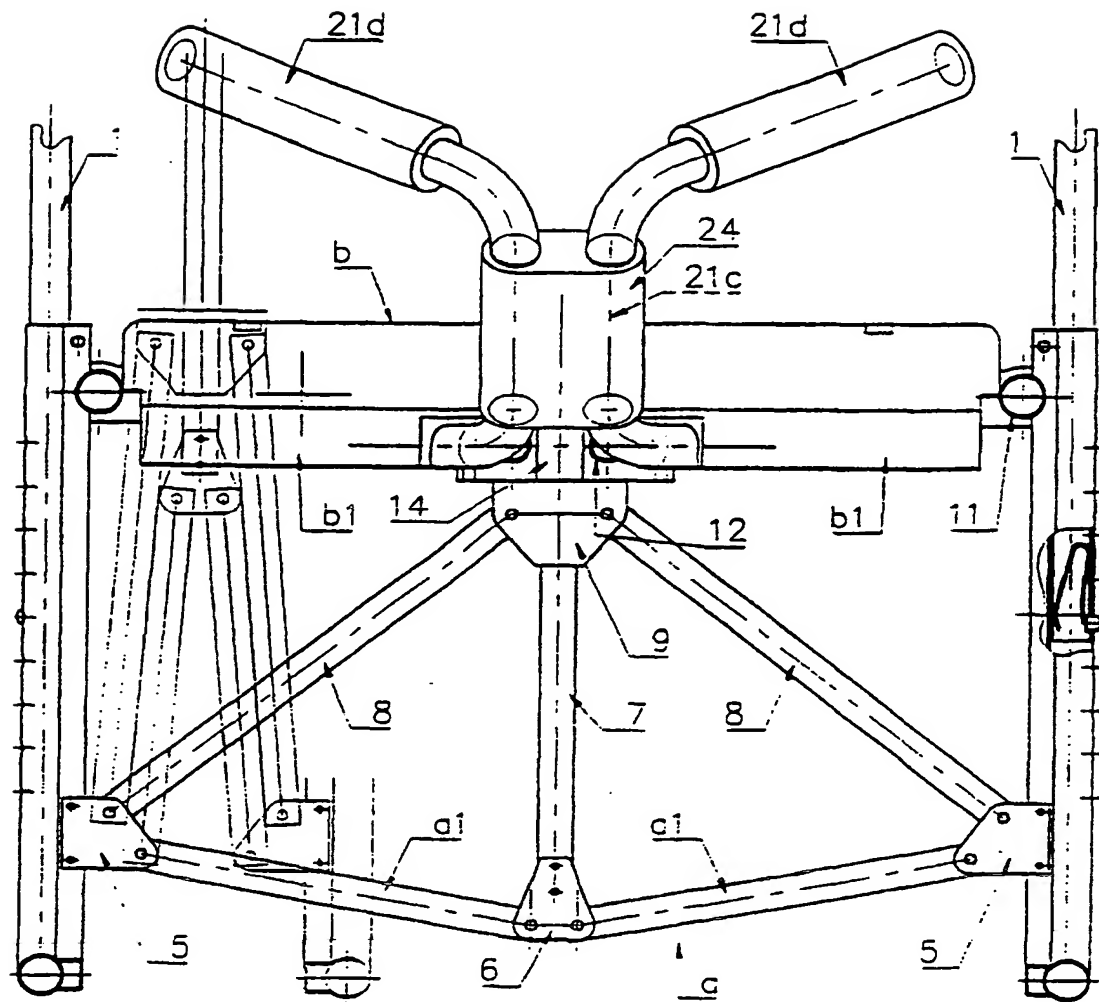
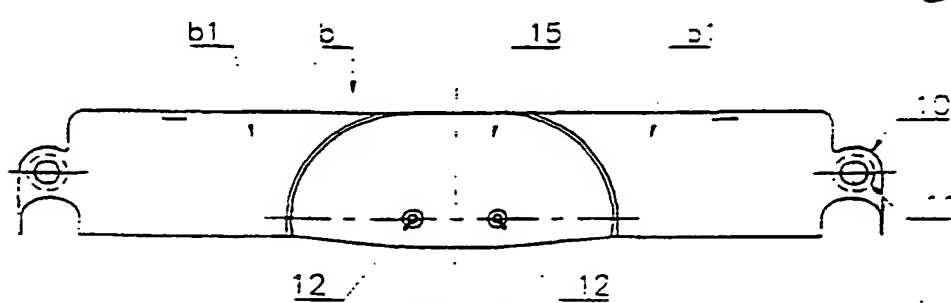
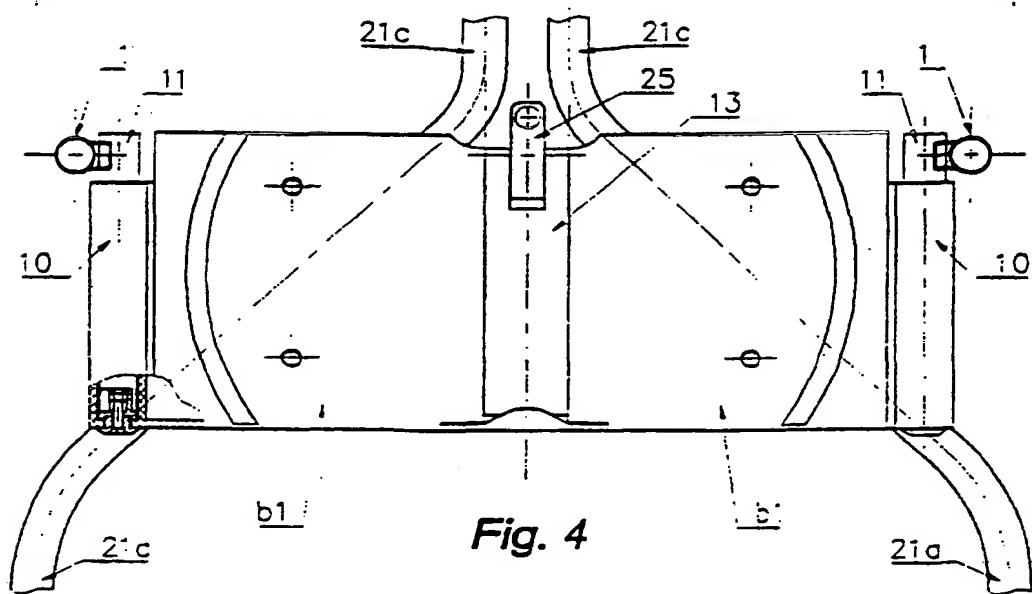
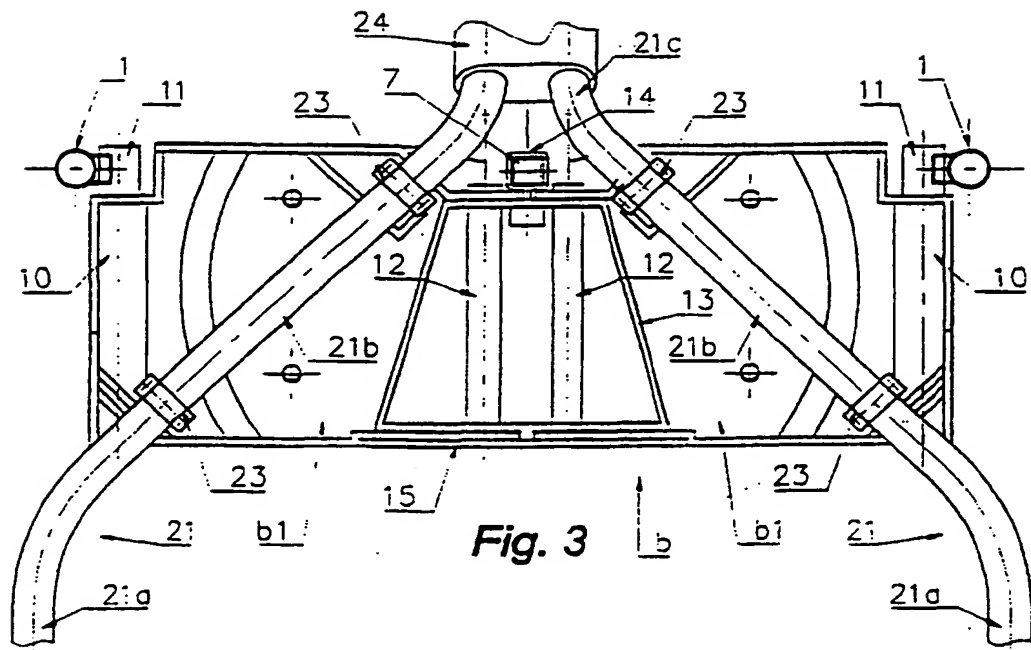


Fig. 2



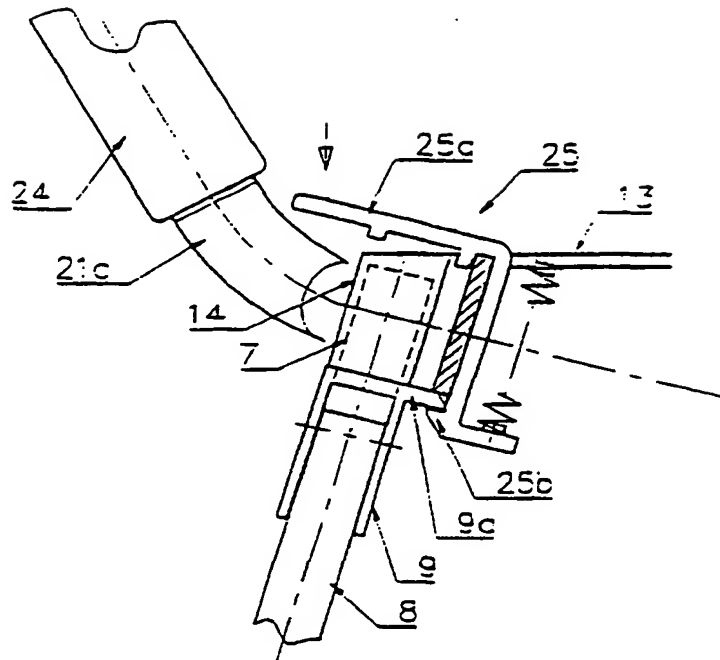


Fig. 6

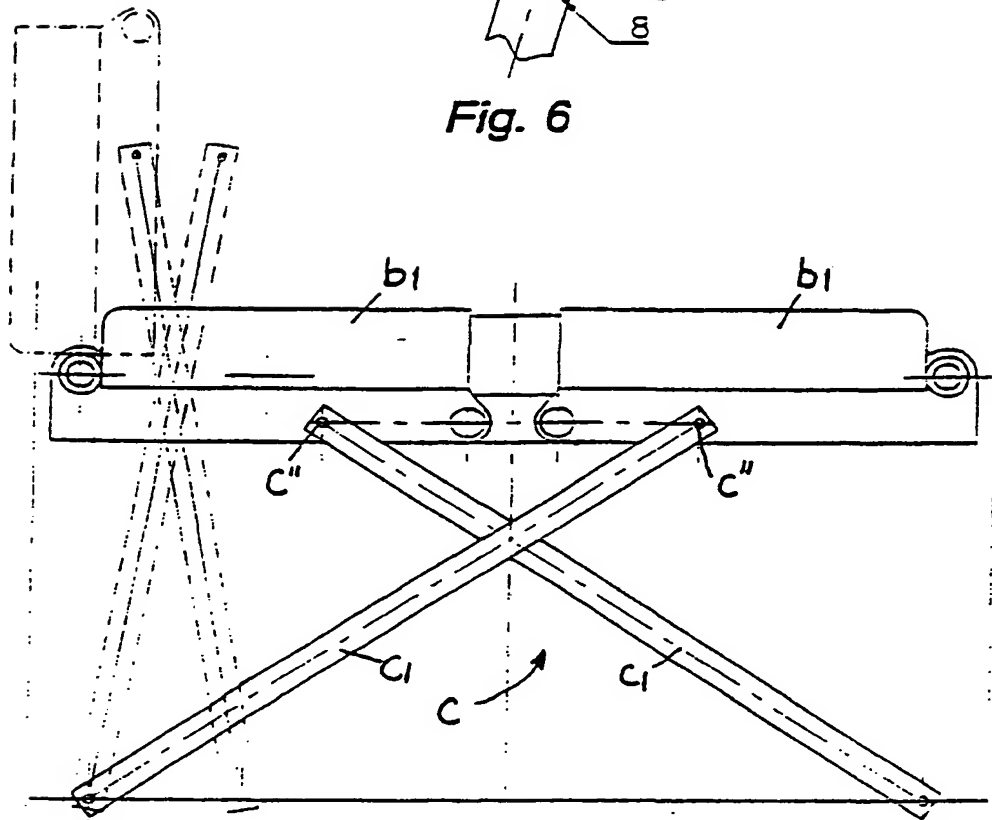


Fig. 7

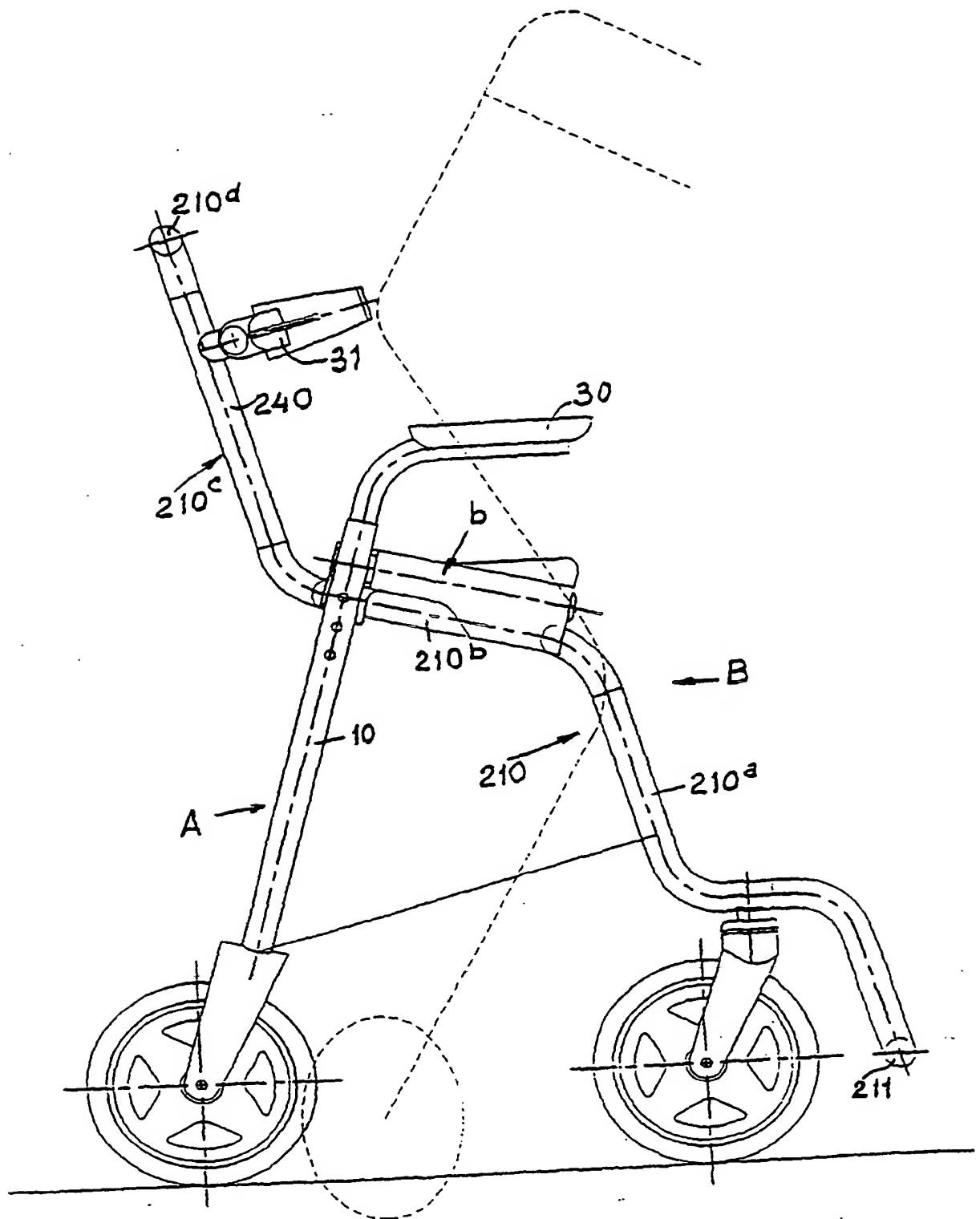


Fig. 8